

**REMARKS**

Appreciation is expressed for the Examiner's indication that claims 3-5, 7, 8, 14-18, 21, 22, 38-42, 44, and 45 recite allowable subject matter and would be allowable if amended to recite the limitations of the corresponding base claim and any intervening claims. Appreciation is also expressed for the Examiner's withdrawal of the previous rejection of claim 67 under 35 USC 112, second paragraph.

In order to emphasize the patentable distinctions of applicants' invention over the prior art, claim 3 has been amended to place it in independent form including the features of base claim 1, from which it formerly depended. As amended, claim 3 recites a method of removing a detectable portion of a pre-selected contraband substance present on a surface, comprising illuminating the surface with pulses of infrared light emitted from an infrared laser. The pulsed infrared laser light has sufficient intensity and duration to cause selective ablation of molecules of the contraband surface. In order to expedite prosecution, claims 1 and 2 have been cancelled. For the sake of clarity, claims 6, 7, 9, 10, and 11 have been amended to depend from claim 3, instead of now-cancelled claim 1.

In order to emphasize the patentable distinctions of applicants' contribution to the art, claim 12 has been amended to include the features of claim 14, which formerly depended from claim 12. Amended claim 12 recites a method of detecting the presence of a preselected contraband substance on a surface of an object. The method comprises the step of illuminating an interrogation area of the surface with a pulsed beam of light emitted from an infrared laser. Claims 13 and 14 have been cancelled to expedite prosecution. For the

sake of clarity, claims 15 – 18 have been amended to depend from amended claim 12 instead of now-cancelled claim 14.

In order to emphasize the patentable distinctions of applicants' contribution to the art, claim 36 has been amended to include the features of claim 38, which formerly depended from claim 36. As amended, claim 36 recites an apparatus for non-destructively detecting the presence of a contraband substance, the apparatus comprising an optical system adapted to deliver a pulsed beam of infrared laser light. Claims 37 and 38 have been cancelled to expedite prosecution. For the sake of clarity, claims 39 – 43 have been amended to depend from claim 36, instead of now-cancelled claim 38.

The present invention provides a versatile and efficient system for detecting a wide variety of contraband substances, notably including commonly used explosive agents. Such systems are now routinely used in many venues to protect the public from the obvious threat of terrorist acts entailing the use of explosives to damage or destroy airplanes and other public conveyances, public buildings, monuments, stadiums and arenas, and the like, whereby untold damage to life and property is inflicted. Advantageously, the present system permits the detection of minute residues of plastic explosives that are notoriously difficult to locate. Unlike previous systems that have required the use of direct mechanical contact with the object to be scrutinized, such as by a mechanical swabbing, the present system can accomplish its function remotely, employing laser ablation to remove sufficient residue for analysis. Accordingly, the system can operate thoroughly and efficiently to scan items rapidly. Such functionality is highly beneficial in many public venues, such as

airports, wherein large numbers of items must be scanned rapidly to preclude unacceptable delays, e.g. to travelers.

The Examiner has objected to the Abstract as not satisfying the required language and format. Submitted herewith is a replacement abstract containing less than 150 words. Applicants respectfully submit that the replacement abstract is in conformity with requirements as to form and language.

Claims 1 – 3 have been rejected under 35 USC 102(e) as being anticipated by US Patent 5,416,321 to Sebastian et al., which discloses an apparatus which maps and detects contaminants within interior surfaces. The apparatus is said to include: (i) an optical vision system used to accurately map the surface to be investigated and treated and (ii) analytical probes used to sample the mapped surface to detect inorganic and organic contaminants in situ.

Applicants respectfully maintain that Sebastian et al. does not disclose or suggest any method of removing a detectable portion of a contraband substance present on a surface by illumination with pulses of infrared laser light, the illumination having sufficient intensity and duration to cause selective ablation of molecules of the contraband surface. Instead, the laser of Sebastian et al. is used solely in connection with an optical visualization system. Applicants thus submit that Sebastian et al. fails to disclose every feature of amended claim 3, as required for a novelty rejection.

In view of the cancellation of claims 1-2 and the amendment of claim 3 to include the features of claim 1, it is submitted that claim 3 is novel over Sebastian et al.

Accordingly, reconsideration of the rejection under 35 USC 102(e) of amended claims 1 – 3 as being anticipated by Sebastian et al. is respectfully requested.

Claim 6 has been rejected under 35 USC 103(a) as being unpatentable over Sebastian et al.

As set forth hereinabove in connection with the rejection of claims 1-3 under 35 USC 102(e), applicants respectfully submit that Sebastian et al. fails to disclose or suggest the features of amended claim 3, on which claims 4-6 depend. It is thus submitted that claims 4-6 are patentable for at least the same reasons as claim 3.

Accordingly, reconsideration of the rejection of claim 6 under 35 USC 103(a) as being unpatentable over Sebastian et al. is respectfully requested.

Claims 9 – 20, 23 – 43, 46 – 66, and 68 have been rejected under 35 USC 103(a) as being unpatentable over Sebastian et al. in view of US Patent 6,610,977 to Megerle, which provides a method and apparatus for screening an object for the presence of an explosive, chemical warfare agent, and/or radioactive material.

In view of the cancellation of claims 13-14 and 37-38, it is submitted that the foregoing rejection is moot with respect to claims 13-14 and 37-38. Accordingly, the rejection will be discussed with reference to remaining claims 9-12, 15-20, 23-36, 39-43, 46-66, and 68.

As set forth hereinabove in connection with the rejection of claims 1 – 3 under 35 USC 102(e) over Sebastian et al., applicants respectfully submit that Sebastian et al. fails to disclose or suggest any method in which a suspect sample is ablated from a surface being scrutinized using a pulsed laser beam. Megerle does not cure this deficiency. At best,

Megerle suggests that particles be dislodged from a person or object by impingement of air streams. No suggestion is made of any form of illumination of the person or object to be analyzed, let alone illumination by a pulsed laser beam that results in ablation of suspect substances. Accordingly, it is submitted that claims 9 – 11, which depend from amended claim 3, are patentable over the combination of Sebastian et al. and Megerle for at least the same reasons as claim 3.

The pulsed laser ablation feature recited in claim 3 is similarly recited in amended claim 12 (and amended claims 15 – 20, 23 – 35, and 60 dependent thereon) and in amended claim 36 (and claims 39 – 59 and 61 – 68 dependent thereon). As a result, claims 12, 15 – 20, 23 – 36, and 39 – 68 are also submitted to be patentable over the combination of Sebastian et al. and Megerle for at least the reasons set forth hereinabove in connection with the 102(e) rejection of claim 1 – 3 over Sebastian et al. and the 103(a) rejection of claims 9 – 11 over the combination of Sebastian et al. and Megerle.

Accordingly, reconsideration of the rejection of claims 9 – 20, 23 – 43, 36 – 66, and 68 under 35 USC 103(a) as being obvious over the combination of Sebastian et al. and Megerle is respectfully requested.

US Patents 4,925,523, 6,137,110 and 5,135,870 were cited by the Examiner; but not applied. These patents obviously fail to disclose or suggest the invention delineated by present claims 3-12, 15-36, and 39-68.

In view of the cancellation of claims 1-2, 13-14, and 37-38; the amendment to claims 3, 6-7, 9-12, 15-18, 36, and 39-43; the amendment to the abstract; and the foregoing remarks, it is respectfully submitted that the present application has been placed in

allowable condition. Entry of the present amendment, reconsideration of the rejection of claims 1 – 68, as amended, and allowance of the present application, are, therefore, earnestly solicited.

Respectfully submitted,

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